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HURRICANES IRMA AND MARIA MANAGEMENT REPORT

Information contained in this report reflects HQ and regional reporting from the most recently completed operational period as well as other reports provided by HQ, regional and interagency sources.

National Incident Management Objectives

Objective 1: Ensure that health and safety of the EPA responders is considered at all times.

Objective 2: Establish an incident management structure and processes employing the Incident Command System to enable effective overall management of the event with deployment of resources (staff and equipment) in a rapid, aggressive and well-coordinated manner.

Objective 3: Ensure prompt review and processing of fuel waiver requests.

Objective 4: Prepare for and provide rapid assessment of industrial facilities as requested by the State or under EPA's statutory program responsibilities for CERCLA Superfund, RMP and FRP facilities. Working with our state partners, contact industrial sources within the impacted area to determine their operational status and determine what support can be provided with the monitoring of the start-up of industrial sources.

Objective 5: Prepare for and provide rapid assessment of & technical assistance to drinking water & wastewater facilities, as requested by the State or local government. EPA will support our state partners in contacting drinking water and wastewater systems.

Objective 6: Prepare a Sustained Response Plan that outlines the resource and equipment needs for a long duration response.

Objective 7: Activate the Agency's Crisis Communication Plan to ensure effective and efficient coordination of all incident communications.

Objective 8: Encourage a collaborative federalism approach, where national, state and local governments interact cooperatively and collectively to solve common problems.

Objective 9: Begin Agency internal and external coordination under the National Disaster Recovery Framework regarding Recovery Support Functions in which EPA is likely to be involved.

Executive Summary

Region 2

- Power remains out for about 70-75% of the residents of Puerto Rico (PR) and The U.S. Virgin Islands (USVI). USVI anticipates restoration of power to 90% of clients by the end December 2017. PR Governor Rossello has set a goal for end of December for PR as well, but the United States Army Corps of Engineers (USACE) doubts this schedule can be met. USACE considers 75% restoration by late January a more likely timeframe.
- Puerto Rico Electric Power Authority's (PREPA) Director will testified at the US House of Representatives Natural Resources and Energy Committee public hearing and attended a briefing for members of a sub-committee of the House Appropriations Committee scheduled on November 14th to discuss the future of the island's electrical grid
- 52% of PREPA's facilities are without power generation capacity in PR
- Discussions continue between FEMA, USACE and the USVI government about vegetative debris burning; a final decision to proceed has not yet been made
- In PR, about 11% of the population is still not receiving drinking water through the utility system. Comparable data for the USVI is not available, but the population is reportedly being provided with adequate supplies of drinking water.
- In PR, 4% of the sewage treatment plants are still not operational. Numerous raw sewage discharges entered waterways upstream of drinking water intakes. EPA, the Centers for Disease Control (CDC), and PR Department of Health (DOH) advised residents not to bathe in surface waters.
- In the USVI, damage to sewage systems was less severe; all eight WWTPs are operational, though problems persist in some plants and pump stations.
- EPA continues to coordinate with the Federal Emergency Management Agency (FEMA), USACE, the United States Coast Guard (USCG), the Commonwealth of PR, and other partners on field operations, assessment of fixed facilities, debris management, drinking water infrastructure, and data management.
- EPA currently has approximately 252 personnel in PR and the USVI with plans to increase to 400 by early December.

[Region 4 reports only on Tuesdays. This information is current as of November 14th]

Region 4

- To date, EPA Region 4 has recovered 77 vessels in the Marathon Key area and transported them to Florida Fish and Wildlife Commission (FWC) staging areas. EPA estimates that 67 vessels remain to be addressed within EPA's area of responsibility (AOR). Currently, EPA vessel recovery operations are limited to private canals in Sector Key West. Operations in the remainder of the State are USCG-lead.
- Landfill Technical Specialists from the Resource Conservation and Restoration Division (RCRD) have performed 372 site visits to date.

Active Regional Mission Assignments and Funding

EPA Region	Mission Assignment Number	Funding Amount	Description of Assignment
Region 2	4339DR-PR-EPA-04	\$6,000,000	To deploy personnel to coordinate and execute all necessary assessments, evaluations, sampling and analysis services/support and other necessary actions associated with ensuring the safety and quality of DW and WW systems, in support of PRASA, Puerto Rico Department of Health (PRDOH).
	4335DR-VI-EPA-02	\$1,008,000	To perform assessment of oil and hazardous materials releases, contaminated debris and other environmental events in USVI.
	4335DR-VI-EPA-04	\$10,000,000	Conduct oil and hazardous materials field operations, including cleanup and disposal of hazardous materials and oil,

EPA Region	Mission Assignment Number	Funding Amount	Description of Assignment
			and response to orphaned containers in order to mitigate actual and potential threats to public health and safety.
	4339DR-PR-EPA-01	\$303,000	EPA to FEMA NRCC or PR JFO/EOC
	4340DR-VI-EPA-01	\$130,000	EPA to FEMA NRCC or USVI JFO/EOC
	4340DR-VI-EPA-04	\$2,100,000	EPA to RRCC, JFO, EPA REOC, State EOC and other coordination venues to support FEMA response operations in the USVI.
Region 4	4337DR-FL-EPA-08	\$10,000,000	Provide oil and hazardous material field response in support of FEMA response operations providing specialized expertise, conducting damage assessment of oil/hazmat waste impact evaluating hazards; and/or response, removal, or disposal of actual and potential oil discharges, and releases of hazardous substances, pollutants and contaminants and remove pollutants from vessels in or upon navigable waters and adjoining shorelines through November 30 th with a state cost share of 10%.
	4337DR-FL-EPA-09	\$675,000	Provide funding for EPA Landfill Specialty Teams through November 30 th with a state cost share of 10%.
Total Active MAs	\$30,216,000		

Total Number of Regional Personnel Involved in Response (as reported on by Region 2 on November 13th and Region 4 on November 14th)

Type	R2 Personnel	R4 Personnel	Total Regional Personnel
EPA*	201	25	226
Contractors	146	55	201
Totals	347	80	427

**These numbers include Region 2 CEPD personnel*

Force Laydown for USVI and PR (as reported by Region 2 on November 13th)

Type	USVI Personnel	PR Personnel	Total Deployed
EPA*	25	101	126
Contractors	67	59	126
Totals	92	160	252

**These numbers include Region 2 CEPD personnel*

Region 2 Significant Activities

- An EPA Assessment Team conducting Orphan Container/Hazardous Debris reconnaissance in the rural area near City of San Sebastian, PR encountered a rural household where the resident was unable to keep their cancer medication cold due to a malfunctioning generator. The team communicated the issue up the chain of command to provide power to the home.
- Disease outbreaks have been reported in several municipalities (diarrhea, conjunctivitis, etc.). Four deaths related to leptospirosis have been confirmed by DOH and the CDC and more than 70 persons have been affected by the disease.
- The USCG has mobilized a hopper barge and crane barge that is tentatively supposed to arrive on November 20th and will conduct initial

removal operations with their Oil Spill Response Organization (OSRO) and transfer/segregate dark/gray water, petroleum based products, HHW, white goods, e-goods, on the hopper barge until space becomes an issue. EPA will coordinate with their operations and schedule our ERRS contractor to retrieve the wastes from the barges.

- R2 continues to coordinate with the USCG for Marine Branch Operations and hazardous material response related to sunken vessel recovery; there are 29 active pollution cases that have been mitigated to date and 97 owners have been contacted to date.
- EPA is awaiting the analytical results for the Department of the Interior (DOI)/National Park Service (NPS) well sampling project that has been completed.
- FEMA is transporting additional EPA contractor equipment by barge to Puerto Rico to support the oil and hazmat MA. ERRS equipment arrived in Puerto Rico on November 13th.
- EPA management implemented a health and safety “stand down” in Region 2. All staff withdrew from field work as EPA Safety Officers verify medical monitoring/screening, training, and vaccination requirements. EPA will provide vaccinations on the islands beginning on November 9th. CEPD employees should have received vaccinations by November 13th, and return to field operations. Employees are fully trained and met medical monitoring requirements with the exception of 3 employees who require additional screening.
- An EPA OSC visited the University of the Virgin Islands laboratory to plan on the removal of waste chemicals. Work is scheduled for November 14th, when additional technicians arrive.
- ERRS made four pickups at the USVI Waste Management office. EPA transported approximately 1,000 containers of old paint, pesticides, and waste solvents to the HHW pad. Going forward, HHW must be dropped off at the HHW pad.
- EPA will assist the removal of approximately 400 gallons of waste oil from the marina in USVI. Removal will occur when a vacuum truck is available.
- The R2 Removal Manager is coordinating with the USACE to provide egress from the white goods drop off location in USVI. When preparations are completed, EPA will ship the Freon extraction device from CONUS.

Laboratory Restoration Efforts in PR

EPA continues to coordinate with PRDOH, the Puerto Rico Environmental Quality Board (PREQB), and PRASA regarding the analytical laboratory services. A FEMA MA is in place to assist with funding the PREQB and PRDOH labs with needed repairs, supplies, equipment, and personnel to come back into service. An OSC is assigned to this project and coordinating directly with the laboratories.

- EPA met with EQB personnel at the laboratory located in Monacillos, PR to conduct a needs assessment for returning the laboratory to operational capacity. The FEMA Resource Request Form draft includes provisions for a generator, equipment, supplies, and a permanent structure.
- On November 8th, EQB and FEMA requested EPA assistance in restoring EQB Main laboratory in Bayamon to full capability for microbiological and chemical analysis. This will support EPA and EQB water assessment activities and hazardous waste MAs with an estimated cost of \$4M.
- EPA met with the Puerto Rico Science Trust, which owns the land and structure occupied by the PREQB laboratory. The Trust provided EPA with the blueprints of the laboratory, and EERS began sourcing for power generating equipment. ERRS is reviewing quotes for equipment to get the laboratory functioning appropriately. EPA and PREQB Central Office management will meet on November 19th.

Superfund and Oil Response Sites

EPA finished post storm emergency assessments at the 34 Superfund and Oil Response Sites in PR and USVI. The sites are stable, do not have offsite impacts, and will not need emergency response work. Any remaining site issues as a result of the storm will be addressed by the Remedial Process Manager (RPM), OSC, or the Department of Defense (DOD) as part of the ongoing site project work.

Regulated Facilities in PR and USVI

The Regulated Facility Assessment Coordinator (RFAC) continues to coordinate damage assessment and field assessment referral information with other R2 inspection programs working in underground storage tanks, Federal Facilities, the Resource Conservation and Recovery Act, the Clean Air Act, and the National Pollutant Discharge Elimination System.

Facility Type	Total Field Assessments Completed (as of November 12 th)	Total # of Facilities to be Assessed
Puerto Rico		
RMP	81	56
FRP	29	23
SPCC (non-FRP)	143	0
USVI		
RMP	1	1
FRP	7	6
SPCC (non-FRP)	78	0

Total Region 2 Drinking Water/Wastewater (DW/WW) Assessments

Drinking Water and Wastewater Assessments (as of November 12 th)		
Assessment Types	Total Assessments on PR	Total Assessments on USVI
On-Site DW Assessments	284	1062
On-Site WW Assessments	233	33

Drinking Water/Wastewater (DW/WW) Assessments in PR

EPA staff are participating in ongoing PRASA water treatment plants (WTPs) and wastewater treatment plant (WWTPs) assessments:

- 15 of the 115 WTPs operated by PRASA are out of service.
- 96 WTPs are working on alternate power or primary power.
- 11% of the population is without drinking water services due to the lack of primary power, lack of diesel, operational problems, or clogged intakes.
- Non-PRASA drinking water facilities serve approximately 4% of the PR populations (PRASA systems service the other 96%). EPA worked with PR Department of Health, the Department of Defense (DOD), Health and Human Services (HHS), and FEMA to assess the 237 non-PRASA drinking water systems throughout PR.
- EPA continues to engage with FEMA and NGOs on temporary power and longer term solutions to the non-PRASA community systems, including the use of solar generation and solar powered water treatment units.
- Approximately 8% of sewage treatment plants in PR are still not operational.

- PRASA operates nearly 800 sanitary pump stations. As of November 13th, at least 148 sanitary pump stations are overflowing sewage due to lack of power, malfunctioning power generator, or pumping problems.
- The Torrecillas Pump Station was put into operation on November 10th
- Out of PRASA's 51 facilities, 2 WWTPs are non-operational and upstream of a drinking water intake.
 - Utuado (2.0 MGD) - Main trunk sewer collapsed, no sewage reaching the plant. A contractor is on site.
 - Ciales (1.5 MGD) – Main trunk sewer collapsed, no sewage reaching the plant. A contractor is on-site.
- 20 WWTPs are working on primary power

Drinking Water/Wastewater Assessments in USVI

- The Department of Planning and Natural Resources (DPNR) established a 3-month alternative DW monitoring procedure, which shifted the monitoring procedure from compliance monitoring to surveillance monitoring, with focus on bacteria and chlorine. EPA continues to coordinate drinking water sampling with DPNR, who notifies the proprietors of affected systems to ensure proper disinfection measures are taken.
- There are a growing number of instances where potable water and roadside water meters are being damaged by clean-up equipment. The continued damage by heavy equipment poses difficulty in maintaining or restoring potable water service to customers.
- On STX, DPNR identified a total of 181 drinking water systems for EPA assistance with sampling
- On STT and STJ, EPA assessed 171 (97%) of all DPNR facilities, with 74% of those facilities being operational. 94 of 138 facilities passed bacterial sampling while 27% failed this sampling. Of those that have failed, 73% of those facilities have now been brought back into compliance.
- Two of the 25 sanitary pump stations are overflowing sewage due to lack of power in STT.
- USVI owns and operates 30 lift stations, 27 of which are minor tributary pumps. In STX 60% (9/15) of all the lift stations are fully operable on alternate power. 40% (6/15) of the lift stations in STX are offline due to mechanical/electrical-primary or alternate power failure. There are 15 lift stations in STT and STJ; their status is not yet available.

PR and USVI Debris Recovery

- EPA is coordinating with USACE on hazardous materials removal operations.
- While USACE completes the permit process for several locations for debris collection staging areas in PR, EPA is coordinating with PREQB, the Puerto Rico Industrial Development Company (PRIDCO), and individual municipalities to establish temporary hazardous materials collection areas. EPA is conducting site visits with USACE and PREQB at the proposed staging areas, as well as at established municipal collection areas.
- There are 5 approved staging areas for HHW in PR and 4 approved staging areas for hazardous waste in USVI (with 2 staging areas for HHW awaiting approval).
- In PR, USACE is developing plans for vegetative debris thermal reduction, including specifics on number of burners, number and location of sites, type of burners (full air curtain unit vs. trenches with blowers), method of deployment (fixed sites vs. moving burners from site-to-site). EPA has included the PR EQB in the discussions. PR EQB waivers are needed to allow burning. Waivers lasting greater than 90-days need EPA approval.
- Discussions continue between FEMA, USACE, and the USVI government about vegetative debris burning; a final decision to proceed is pending. USACE reports that the vegetative debris burn operations on STX are not likely to start before the November 17th or 20th. Operations on STJ could start soon after that on or about November 24th. No date is set for STT. EPA is facilitating a discussion with the USVI Department of Health (VIDOH) and The Agency for Toxic Substances and Disease Registry (ATSDR) about the health component for the vegetative debris burn operations.
- In USVI, EPA deployed three air monitors to areas adjacent to the debris staging areas. The Emergency Response Team (ERT) plans to deploy personnel to prepare monitoring equipment prior to the burning of vegetative debris. The Department of Homeland Security developed the Interagency Modeling and Atmospheric Assessment Center (IMAAC) model for particulate air modeling during the vegetative debris burning operation.

Orphan Container, Pollution Response, and Vessels in PR and USVI

- As of November 12th, EPA Region 2 has removed a total of 5,822 containers in PR and 3,514 in USVI.

Vessel Assessments (as of November 14 th)		
Container Type	Vessels Assessed	Vessels Closed
Puerto Rico	339	106
U.S. Virgin Islands	451	33

Region 4 Significant Activities

Orphan Container, Pollution Response, and Vessels in Florida

- To date, EPA has collected 722 orphan containers, including drums, oil containers, and propane tanks. These items are being stored for waste stream categorization at the container staging area at the Florida Keys Marathon International Airport (MTH) and await repackaging prior to recycling or disposal at an offsite location.
- Land-based orphan container recovery operations have been completed. The Orphan Container Removal Group is being redeployed to form a second vessel recovery team.

Total Containers Collected (as of November 14 th)	
Container Type	Total Collected
Tanks > 100 gallons	49
55-gallon drums	208
Propane tanks	231
Refrigerant tanks	22
Oil and gas containers	103
Haz-labeled containers	23
Paint and coatings containers	17
Uncategorized containers	69
Total	722

Combined EPA and USCG Vessel Operations Tracking (as of November 14 th) ¹			
USCG Sector	Vessels Identified ²	Vessels Completed ³	Vessels Remaining
Jacksonville	182	91	91
Key West ⁴	1776	1296	480
Miami	289	129	160
St. Petersburg	301	269	32
Total	2548	1785	763

1. As reported by USCG Sector Key West

2. Table lists confirmed targets. Unified Command has identified over 3,000 potential targets for assessment

3. Removed by UC or 3rd party, transferred to FWC, or determined no further action necessary

4. Includes EPA and USCG vessel operations

Landfill Specialty Team

A Landfill Specialty Team (LST) mobilized to the Florida Keys on September 27th and has performed 372 site visits, to date. During the reporting period, the LST completed site visits at 128 identified Disaster Debris Management Sites (DDMSs) in the Upper Keys, including the area from Islamorada to Saddlebunch Keys.

EPA Headquarters Significant Activities

- On November 14th, Regional Administrators for Regions 2, 4, and 6, and OLEM Acting Assistant Administrator took part in a hearing before the House Committee on Energy and Commerce, Subcommittee on Environment at 10:00 a.m. EPA witnesses will share information on the Agency's disaster efforts. The hearing webcast will be available at <http://energycommerce.house.gov/>.
- On November 14th, EPA representatives will participate in a member-level briefing with the House Appropriations Committee, Subcommittee on the Interior, Environment, and Related Agencies.
- On Monday November 13th, Regional Administrators for Regions 2, 4, and 6, and OLEM Acting Assistant Administrator took part in a pre-brief to prepare to testify on November 14th about the agency's disaster efforts.
- On November 7th, EPA issued a news release on medical waste disposal in USVI and continued work on HHW flyers for distribution in USVI.
- EPA finalized the story map on the Hurricane Maria Response: <https://epa.maps.arcgis.com/apps/MapJournal/index.html?appid=051533ab716c4f5e821dc361cbb1876f>.
- The HQ EOC is activated to Level 1 in support of EPA Regions 2 and 4 responses to Hurricanes Irma and Maria. For the Hurricanes Irma and Maria responses, the HQ EOC is coordinating on several levels with EPA Regions 2 and 4, and other Federal agencies.
- The HQ EOC is physically staffed with 5 EPA personnel and 1 contractor. The HQ EOC also continues to staff the FEMA National Response and Coordination Center's (NRCC) ESF-10 desk.
- EPA Senior Management on the Policy Coordination Committee (PCC) are holding weekly calls to discuss issues, highlights, and adherence to the management objectives.

Other EPA Activities

- EPA asked FEMA to wait until burn planning is complete prior to issuing news releases regarding vegetative debris burn operations.
- EPA HQ issued a No Action Assurance (NAA) to Merck, Sharp & Dohme Corp. to enable continued use of four emergency generators located at its Las Piedras, PR facility. On October 20th, EPA extended the NAA to cover a 5th generator at the facility. On October 31st, EPA renewed the NAA and it now expires on January 31st, 2018.
- EPA is evaluating a variety of force majeure claims from a number of entities in PR and USVI on a case-by-case basis and preparing responses as appropriate.
- CID has 2 agents assigned to PR and available for security details. Additional agents will be mobilized to PR as needed.
- Community Involvement Coordinators (CIC) accompanied the Drinking Water Sampling Team to two schools on STX.
- Region 2, Region 4, and HQ activities related to Irma and Maria response efforts are available at: www.epa.gov/hurricane-irma and www.epa.gov/hurricane-maria, respectively.